

## **Soudan Visitors' Guide**

### **1) How to find the Soudan Mine staff parking lot**

The Soudan Mine head frame is visible from highway 169. Highway 169 runs North from highway 53, it is a right turn about 4 miles North of Virginia, assuming you are driving North on 53.

#### **Arriving at Soudan from the South on highway 169:**

Soudan is about 2 miles North of Tower. The Soudan mine staff parking lot is about a half mile from the place where you turn off route 169.

- Turn left at the corner where the iron ore car and Soudan Mine sign are located.
- Proceed up the hill past the Soudan Community Store. Keep to the right at the store.
- Travel straight ahead, you will see a church on your right, continue on this road which curves sharply to the left.
- You will spot the US post office on the left, then the MINOS surface building, also on the left, head on up the hill.
- Near the top of the hill stay to the left and you will enter the park. Follow that road (a small building on the right is the Park office) continue up to the parking area.
- Park and walk to the head frame.

#### **Arriving at Soudan from the North (from Ely) on highway 169:**

The Soudan mine staff parking lot is about a half mile from the place where you turn off route 169.

- Turn right on Jasper Road at the Soudan Mine sign (an iron ore car is part of the display).
- Travel to the stop sign. You will see the US post office and the MINOS surface building directly ahead.
- Turn right up the hill.
- Near the top of the hill, you will see a road toward the left into the park. Follow that road (a small building on the right is the Park office) continue up to the parking area.
- Park and walk to the head frame.

Airlines serve Hibbing, Minnesota (about a forty five minute drive from Soudan), Duluth, Minnesota (about ninety minutes from Soudan), or Minneapolis, which is a four-hour drive.

### **2) When to arrive and what to do when you get there**

You should plan to arrive at the beginning of the day shift (6:50 AM). Safety training will be held once you arrive underground. The Laboratory Safety Officer is Denise Osterholm. She will be in charge of your safety training. Copies of the Soudan Underground Lab Safety Manual are available from our web site.

**Safety is taken very seriously!**

Be at the head frame not later than 6:50 AM (check exact times before you arrive). Introduce yourself to Jerry Meier or one of the crew members. They will get you checked in and provide a hard hat.

NOTE: These times will change from time to time. Check before you arrive!

- You must tag yourself öinö when you go under ground.
- You must tag yourself öoutö when you are on the surface.

A designated cage rider will help with this procedure and be responsible for the riders on the cage.

You must wear a hard hat while in the cage, in the drift or at any other time that there is work overhead or under any circumstance when or where the Safety Officer proscribes it.

Expect to remain underground for a full ten hours!

### **3) Safety REQUIRED TRAINING**

The Soudan mine is a construction area, many potential hazards exist. You must become familiar with and comply with all safety regulations. Prior to arrival you will be required to read and reply to the Lab Safety handbook posted at <http://soudan.umn.edu/safety/handbook>

You will NOT operate any powered equipment without prior authorization and training (including the cranes, hoists, or forklift, and machine shop equipment).

We are not allowed to wander around or explore the drifts in the mine. Stay in the laboratory, you should not even go out to the shaft station without a designated cage rider. The cage may ONLY be operated by trained personnel. A trained cage operator must be present before you to enter the cage.

### **4) Housing**

Housing is very limited. You cannot just arrive and expect to find a place to live! One of the first things you must do when planning your trip to the mine is to call Eileen at 218-753-8990 or e-mail at [Eileen@sudan.umn.edu](mailto:Eileen@sudan.umn.edu) for housing arrangements. DO NOT COME if you do not have a place to stay.

- We have one house with four bedrooms for rent. The rooms are rented on a first come first served basis. Rental includes weekly housekeeping (not including dish washing). The house is outfitted with complete kitchen, bedding and linen, cable TV, and LAN access. There is no charge. The rooms are numbered 1 through 4, please use the room assigned to you. If you find it necessary to switch to a different room, let Eileen know as soon as you are able.

Other choices for housing:

- A cheap source of temporary housing in Soudan is the Parkside Homes. A former medical care facility that is now a boarding house. Contact them at (218)753-5055.
- The Tower Café has rooms above the café. The contact number is (218)753-2710
- Fortune Bay Resort and Casino ([www.fortunebay.com](http://www.fortunebay.com)). The address is 1430 Bois Forte Road, Tower, MN. The phone number is 218-753-6400 or 1-800-555-1714. Follow the billboard signs along Hwy 169 before you get to Tower.

Additional Housing and information about Ely, Minnesota is at [www.ely.org](http://www.ely.org). Ely is 22 miles North of Soudan on highway 169. Virginia, MN does not appear to have a similar web page. Virginia is about 22 miles South of Soudan on highway 169, then left four miles on highway 53.

#### Directions to the rental house (Shift Leaders House)

As you come from Tower, MN on Hwy 169, you will soon come to Soudan, MN. Turn left on Jasper Street. Follow Jasper Street to the STOP sign. Turn left. The Shift Leaders House is the green house across from the Post Office. The address is #30 1<sup>st</sup> Avenue. The MINOS surface building is next to the post office.

### Contact People:

In the event that you have difficulties finding the property where you are to stay, or locating the keys, etc. please contact:

If before 3:30 pm on a weekday -	Eileen Amos at	218-753-8990
If after 3:30 pm on a weekday -	Jerry Meier at	218-753-2909
If on the weekend or late at night -	Jerry Meier at home:	218-984-3506 cell (218)290-0340

### **General Information - Housing**

1. The key should be in the lock box hanging on the service door of the garage at the Shift Leader house. The lock box combination is **9024**. After retrieving your key, you must enter the combination again to lock the box. Please keep your key if you plan to return. If you lose or forget your key, you will be charged a \$5.00 fee to replace the key.
2. The house is cleaned once per week. Clean sheets and towels should be available in the closets. Please leave dirty sheets/towels in a neat pile on the bathroom floor.
3. The garbage will be removed once per week: if necessary, put tightly closed bags in the dumpster at the Surface Building.
4. Please buy the small things (soaps/paper towels/aluminum foil/et al) and leave them for others. It will average out in our micro-communitistic community.
5. Please, please: throw out food that will spoil in weeks or earlier before you leave! Leave the rest, if you wish: any canned goods, noodles, spices, instant coffee etc. is fair game for any future residents. The same rule applies to freezer food. If you want to keep it, put a label on it so that MIGHT work.
6. Try to keep the units relatively mess-free. The cleaners will do a lot, but they may not visit before the next person arrives. Wash the dishes before you leave (one cup/one glass left is tolerable).

### **5) Food**

You must bring your own lunch underground. MINOS is charged \$35.51 for each cage trip and the cage is frequently not available for MINOS use. You will not be allowed to leave the mine for lunch.

Microwave ovens, pizza ovens, toaster oven and limited refrigerator space are available underground. Coffee or Soda Pop (i.e. Coke, etc.) may be purchased underground. Soda pop is dispensed by machine and requires 50 cents in quarters, nickels or dimes.

Groceries are available at the following local stores:

- Zupø in Tower has most essential items. (The u in Zupø is pronounced as the oo in loop.)
- Soudan Community Store has limited number of items available.
- Food and Fuel in Tower has a limited number of items available (open until 10 or 11pm).

If you arrive after 6 PM you may have trouble finding a lunch for the next day (Food/Fuel is mostly frozen pizzas). Your best bet is the Super One Foods store in Virginia, which is open past 10 PM year round, or the Food and Fuel in Tower.

## 6) Computing at Soudan

The laboratory has a high-speed internet connection. Wireless is available underground, in the surface building and the Shift Leaders House. To use a laptop, one needs to register the MAC address of the computer with Dave Saranen ([saranen@sudan.umn.edu](mailto:saranen@sudan.umn.edu)). If you send your mac address before coming you will be able to use the network as soon as you arrive. Further instructions about security are printed on a sheet posted in the shift leaders house.

### Accounts for people coming to work on MINOS:

Before coming to Soudan, visitors should make sure they have gotten a Fermilab User's ID, Fermilab computing (unix) account, a cryptocard, and Kerberos.

After that, people should request an offline account if they plan an extended stay or looking at old runs, and an account on the gateway if they need offsite access to run the detector. The accounts at Soudan can be set up through the following web page:

[http://www.numi.fnal.gov/minwork/computing/soudan\\_accreq.html](http://www.numi.fnal.gov/minwork/computing/soudan_accreq.html)

## 7) Restaurants

There are very few restaurants open in the Soudan area during the off tourist season (from Memorial Day in late May to Labor Day in late August). Restaurants, which are open year around and moderately near Soudan, are:

- The Black Bear (about 7 miles south on route 169) The Bear is an old Soudan 2 tradition. The Bear is open seven days a week.
- The Bench Warmer (South end of Tower)
- Good Old Days Bar and Grill (North end of Tower)
- The Tower Café (in Tower)
- The Casino at Fortune Bay (South on 169 to highway 77, then follow the signs. It is about 7 miles from Soudan)
- The Giants Ridge Ski Resort has a year around full service restaurant. It is about 20 miles South of Soudan. Call before you go, they may be very busy or just choose to close on some nights. Phone 218-865-4151

During the tourist season (basically June first to mid September), there are many more eating establishments available. A few of these summer restaurants are of extremely good quality. Possibilities include: The Chocolate Moose, Burntside Lodge, Vermillion Club, or the Mantel House. Check with the local folks.

Ely is 22 miles North of Soudan and has a few more choices in winter and many more during the tourist season ([www.ely.org](http://www.ely.org)). Another possibility is Virginia about 25 miles South of Soudan. <http://virginiamn.areaguides.net/>.

## 8) Access

Underground access is extremely limited. You cannot go underground or leave from underground except at shift changes or via special arrangements made with authorized personnel. You must be tagged in while

underground and tagged out when on the surface. We cannot accidentally leave anyone stuck underground. If you fail to tag yourself out, you will be called at your residence and be asked to return to the mine and tag yourself out.

## **9) Toilet facilities and potable water**

Underground toilet facilities are a porta-potty, much like you might see on an isolated construction site. We do not have potable running water underground. Potable bottled water is carried underground and is available.

## **10) Driving in Minnesota**

Driving rules and regulations tend to be strictly enforced in the US. Police do not have a sense of humor about violations! Driving while under the influence of alcohol is considered a very serious offense.

NOTE: Each state has its own rules with respect to driving. If you are going to drive in another state, check with the particular state you plan to visit. Many states have such information available on the web.

### **Automobile Driver's License Rules for Minnesota.**

You do NOT need a Minnesota drivers license if your situation fits in one the categories discussed in the next two paragraphs. This is a quote from the official Minnesota web site.

"Anyone traveling through or visiting the state of Minnesota who is at least 15 years old and has a valid driver's license issued by his/her home state or country. This includes those working for the United States Armed Forces (and their families) while they are stationed in Minnesota, regardless of the length of their stay.

"Any nonresident at least 18 years old who is temporarily in Minnesota, and whose home country does not require drivers to be licensed. This only applies if the motor vehicle he/she drives is legally registered for the current year in his/her home country. He/she may legally drive this vehicle in Minnesota for not more than 90 days in any calendar year without a valid license or permit."

### **Auto Insurance**

When you rent/lease/hire a car you must have a certain minimum amount of automobile insurance. Minnesota State law requires this. If you have an accident with a rental car, you will probably be held responsible for the damage, even when the accident is not your fault. Ultimately, you may be reimbursed if the blame is assigned to another party involved in the accident. Adequate insurance removes this hassle. You should consider the insurance offered by the rental agency if you do not have good automobile insurance from home. The insurance offered by the agency will be expensive.

If you buy a car, you will be responsible for taxes and car insurance. Taxes depend on the value of the car, but can run to a few hundred dollars per year. Auto insurance depends on circumstances, but could be as much as 100 per month. You do not need a social security number for anything associated with a car. An exception might occur if you apply for a loan to buy a car.

## **11) Medical**

You do not need to register with health authorities.

If you need a dentist or doctor, either ask one of the locals or look in the phone book. There are no routine medical facilities in Tower/Soudan. A dentist and a physician are available on some days of the week. Emergency care is always available through 911, as described below.

The nearest hospitals are in Ely to the North or Virginia to the South. Either facility is about 25 miles from Tower/Soudan. Large regional hospitals are available in Duluth about 90 miles away.

It is generally true that medical care in the US is quite good. It is also very expensive. The dollar cost of medical care can be mind-boggling. It is imperative that you obtain medical insurance or such from your home country prior to entering the US. You are not insured just because you are working in the experiment.

If an emergency arises dial 911. In principle, the 911 operators know the location of the telephone you are using and can direct aid to you. However, this is not always the case, so try to have an address or location description available. If you have a medical emergency an aid car with trained emergency medical technicians will be quickly dispatched to you.

The emergency number 911 is for all emergencies, fire, police, or accident. This system is quite effective. If you are seriously concerned about an emergency, you should not hesitate to dial 911. The police will not be involved unless their presence is required by the nature of the emergency.

## **12) Banking and Money**

There is a bank in Tower. Accounts are fairly easy to open.

ATM machines are practically everywhere. Most ATM's charge a dollar or two for each cash withdrawal, but it is by far the easiest way to keep your pocket full of cash.

Most local establishments take VISA or MasterCard.

## **13) Social Security Number**

A social security number is not required unless you are an employee of a US organization. (You are going to pay US federal income tax in this case.) The US post office can supply you with an application form, if you need to apply for a number.

## **14) Immigration and Customs**

When going through immigration at your port of entry to the US, you will be asked what you will be doing here. DO NOT say you are coming here to work! As is true in most countries, entering the US to work and replace local workers is a red flag issue. You want to avoid this. Don't lie, but some responses that are less likely to raise red flags are; coming to Sudan to assemble a device designed in your home institution, training US technicians on installation and operation of a device or instrument or even just to visit. Basically, you are here to assist or train US workers in some new task or installation, not here to replace US workers. Talk to people that have visited the US for similar tasks.

### **Registration**

No registration of any kind is required after you leave US immigration at your point of entry.

## **15) Weather and Dress**

### **In the Mine**

The temperature in the drifts is about 55°F. In the halls, it is roughly room temperature. The ride down the shaft can get your clothes dirty. Layering is a good idea.

### **Above Ground**

Local weather forecasts for Ely are on the web at a few locations (e.g. <http://www.weather.com/weather/local/USMN0235>). For reference, here are the average high and low temperatures for a few selected modules.

Mid January:	15°F & -6°F
Late March:	35°F & 16°F
Late April	50°F & 27°F

Early June	69°F & 45°F
Early August	77°F & 56°F
Late September	55°F & 37°F

These are typical temperature but 20°F variations from these values are also typical. Cold weather can happen most of the year. Expect snow from late October through early April. Do not be surprised by snow in September or May.

## 16) Transportation

### Air travel to the mine

Usually air travels arrive at the mine from Minneapolis/St. Paul (MSP, 220 miles away), from Duluth (DLH, 90 miles away), or from Hibbing (HIB, 60 miles away). Northwest Airlines (NWA) operates regional flights to Hibbing from MSP, NWA and American fly to Duluth, and most air carriers fly to MSP.

### Surface Travel

The distance from Tower to the mine is about two miles. Walking is a possibility. However for almost everything else access to a car is required. Fortunately, much of the time, there are enough visitors with vehicles to provide transport to restaurants and grocery stores. Having your own car is not an absolute necessity.

## 17) Local/Mine Jargon: a glossary

- Boat - Another word for the cage (e.g. don't miss thei )
- Cage - A car used to move people and equipment underground at the mine.
- Cage rider - A trained cage operator.
- DNR - The Minnesota Department of Natural Resources (also known as The State Park). They own and operate the Mine.
- Drift - A tunnel in the mine
- Hoist - The hoist is what pulls on the cable and moves the cage.
- Headframe - The Steel structure on the surface above the mineshaft.
- Physicist shift leader - The supervisor and coordinator for all physicists in Soudan and in charge of coordinating the installation with the mine crew (with the Soudan Supervisor, Bill Miller).
- Shive - The main wheel that holds the cage's cable. (Pronounced shiv, as in shiver.)
- Day shift - Starts roughly at 7:00 am and runs until 5:00pm.

## 18) Some Important Phone Numbers, Addresses and People

Underground:	218-753-2909
	218-753-6904. (FAX)
MINOS Surface Building: Voice	218-753-8990
	218-753-8920 (FAX)
Physicist Shift Leader House:	218-753-5075

For US Postal Service:  
 Soudan Underground Laboratory  
 P.O. Box 175  
 Soudan, MN 55782

For Federal Express and UPS:  
 MINOS Surface Bldg  
 41 First Street  
 Soudan, MN 55782

Jerry Meier	- Soudan Laboratory Supervisor cell (218)290-0340
Denise Osterholm	- Assistant Laboratory Supervisor
Eileen Amos	- Office Manager